

## **CLAIMS**

Claims 1-16 (Cancelled)

17. (currently amended) A transmitter system configured to transmit pulse amplitude modulated signals, comprising:

a clock interface configured to generate a clock signal;

a pulse generator system, operatively coupled to said clock interface, said pulse generator system configured to shape a plurality of incoming pulses;

a drive system operatively coupled to said pulse generator system, said drive system configured to amplify and combine said plurality of incoming pulses;

a data interface configured to generate a data signal; and

a variable gain amplifier operatively coupled to said data interface and operatively coupled to said drive system, said variable gain amplifier configured to provide [[the]] an appropriate gain to said drive system to obtain a desired amplitude.

18. (Original) The transmitter system of claim 17 further comprising a pulse repetition frequency module, said pulse repetition frequency module operatively coupled to said pulse generator system and configured to generate variable pulse repetition frequencies.

19. (Original) A transmitter system configured to transmit pulse amplitude modulated signals, comprising:

a clock interface configured to generate a clock signal;

a pulse generator system, operatively coupled to said clock interface, said pulse generator system configured to shape a plurality of incoming pulses;

a drive system operatively coupled to said pulse generator system, said drive system configured to amplify and combine said plurality of incoming pulses to generate a plurality of output signals;

a data interface configured to generate a data signal; and

an attenuator operatively coupled to said data interface and operatively coupled to said drive system, said attenuator configured to reduce the amplitude of said plurality of output signals and provide a plurality of modified output signals having a desired amplitude.

20. (Original) The transmitter system of claim 19 further comprising a pulse repetition frequency module, said pulse repetition frequency module operatively coupled to said pulse generator system and configured to generate variable pulse repetition frequencies.

21. (Original) A transmitter system configured to generate base band signals capable of being modulated using pulse amplitude modulation, comprising:

a data modulation unit configured to generate a digital stream of pulse data which is synchronized with a master clock, said data modulation unit comprising:

a transmit module configured to generate a clock pulse, and

a pulse amplitude modulation module configured to generate a data stream for a desired pulse amplitude;

a transmitter unit coupled to said data modulation unit, said transmitter unit configured to receive said digital stream of pulse data and generate a radio frequency (RF) pulse stream;

an amplitude control system operatively coupled to said transmitter unit and said pulse amplitude modulation module, said amplitude control system configured to generate a modified amplitude of said RF pulse stream; and

an antenna coupled to said transmitter unit, said antenna configured to transmit said modified amplitude of said RF pulse stream.

Claims 22-27 (cancelled)

28. (new) A transmitter system, comprising:

a data modulation unit configured to generate a digital stream of pulse data which is synchronized with a master clock, the data modulation unit comprising a pulse amplitude modulation module, which is configured to vary the amplitude of the digital stream of pulse data and a transmit module operatively coupled between a pulse repetition frequency module and the pulse amplitude modulation module, said transmit module configured to distinguish between different modulation techniques;

a transmitter unit coupled to said data modulation unit, said transmitter unit configured to receive said digital stream of pulse data and generate a radio frequency (RF) pulse stream;

an antenna coupled to said transmitter unit, said antenna configured to transmit said RF pulse stream, wherein said RF pulse stream is an ultra wide band pulse stream;

wherein said transmitter unit comprises a pulse generator system operatively coupled to said transmit module, said pulse generator system configured to generate said ultra wide band pulse stream for transmission by said antenna;

wherein said pulse generator system is configured to generate a plurality of pull-up turn-on signals, a plurality of pull-up turn-off signals, a plurality of pull-down turn-on signals, and a plurality of pull-down turn-off signals;

wherein said transmitter unit further comprises a drive system operatively coupled to said pulse generator system and configured to combine said plurality of pull-up turn-on signals, said plurality of pull-up turn-off signals, said plurality of pull-down turn-on signals, and said plurality of pull-down turn-off signals to generate said ultra wide band pulse stream; and

wherein said drive system is operatively coupled to said pulse amplitude modulation module, said pulse amplitude modulation module is configured to generate a desired pulse amplitude for said digital stream of pulse data.